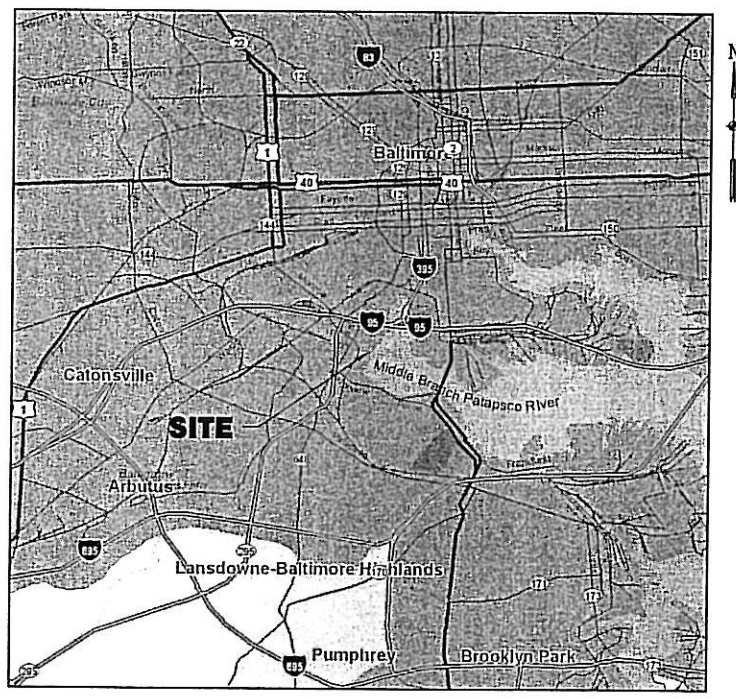
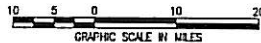


FORMER CARR-LOWREY GLASS WORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION

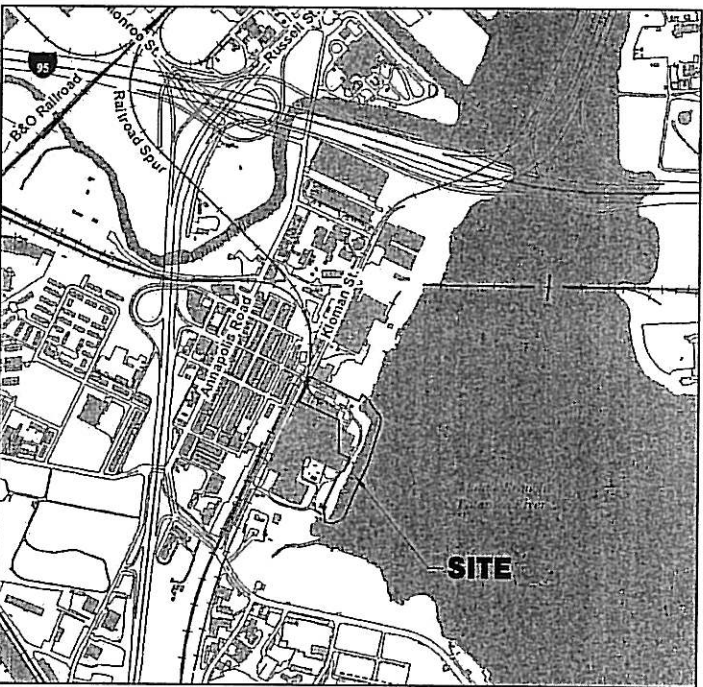
MARCH 2009



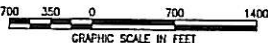
VICINITY MAP



DRAWING NUMBER	SHEET NUMBER	DRAWING TITLE
T-1	1 OF 14	TITLE SHEET
G-1	2 OF 14	EXISTING CONDITIONS PLAN
C-1	3 OF 14	SUBGRADE PLAN
C-2	4 OF 14	WETLAND DESIGN PLAN
C-3	5 OF 14	MISCELLANEOUS DETAILS
ES-1	6 OF 14	OVERALL EROSION AND SEDIMENT CONTROL PLAN
ES-2	7 OF 14	EROSION & SEDIMENT CONTROL PLAN - INITIAL PHASE
ES-3	8 OF 14	EROSION & SEDIMENT CONTROL PLAN - FINAL PHASE
ES-4	9 OF 14	EROSION & SEDIMENT CONTROL DETAILS
ES-5	10 OF 14	SEQUENCE & VEGETATIVE STABILIZATION SPECIFICATIONS
PR-1	11 OF 14	WETLAND SILL PROFILE
CS-1	12 OF 14	CROSS SECTIONS I
CS-2	13 OF 14	CROSS SECTIONS II
CS-3	14 OF 14	CROSS SECTIONS III



LOCATION MAP



REVISIONS	DESCRIPTION
BY	
DATE	
NO.	

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13853, EXPIRATION DATE: JULY 2, 2009.

SEAL

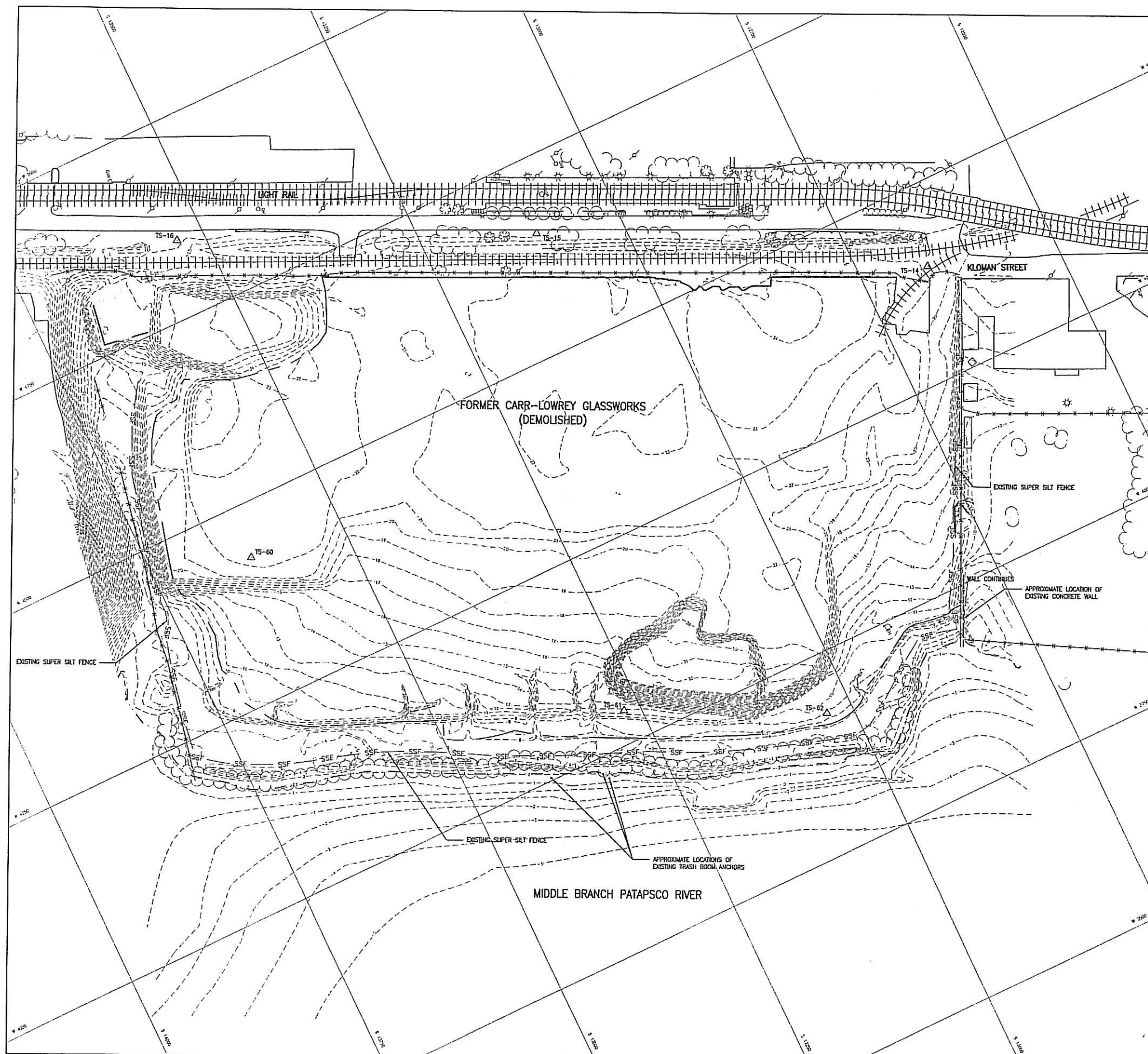
FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION

BALTIMORE, MARYLAND

TITLE SHEET

EA
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

DATE	MARCH 2009
DESIGNED BY	REG
DRAWN BY	JAP
CHECKED BY	CAT
PROJECT MANAGER	JMH
PROJECT NUMBER	14543.01
DRAWING NUMBER	T-1
SHEET NUMBER	1 OF 14



- LEGEND**
- 5- - - - - EXISTING GRADE INDEX CONTOUR
 - 1- - - - - EXISTING GRADE CONTOUR
 - — — — — EXISTING ROAD
 - + + + + + EXISTING RAILROAD LINE
 - ▭ EXISTING STRUCTURE
 - — — — — EXISTING WALL
 - - - - - EXISTING FENCE
 - - - - - EXISTING GUARD RAIL
 - - - - - EXISTING TREELINE
 - EXISTING TREE
 - EXISTING UTILITY POLE
 - EXISTING UTILITY GUY WIRE
 - EXISTING UTILITY LIGHT
 - EXISTING MANHOLE
 - △ EXISTING FIRE HYDRANT
 - △ EXISTING PANEL
 - EXISTING MONITORING WELL
 - SSF — SSF — EXISTING SUPER SILT FENCE
 - - - - - APPROXIMATE LIMIT OF EXISTING ENVIRONMENTAL CAP
 - - - - - MEAN HIGH WATER LINE
 - △ TRAVERSE POINT

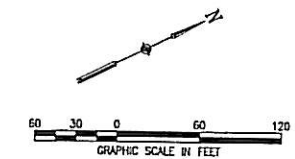
- NOTES**
- ALL HORIZONTAL COORDINATES ARE REFERENCED TO THE BALTIMORE CITY HORIZONTAL DATUM.
 - ALL ELEVATIONS ARE REFERENCED TO BALTIMORE CITY VERTICAL DATUM. WATER ELEVATION REFERENCES WERE BASED ON THE DATA PROVIDED BY NOAA TIDAL GAUGE 8574680, WHICH IS LOCATED AT FORT MCHENRY ALONG THE PATAPSCO RIVER. DATUM VALUES AT THE TIDAL GAUGE ARE BASED ON THE NEW TIDAL DATUM EPOCH (1983-2001).

VERTICAL DATUM CONVERSION NOAA TIDAL GAUGE 8574680	
DATUM	(FEET)
MHW	2.16
NAVD 83	1.62
MLW	1.02
MGVD 29	0.84
MLLW	0.78
BALT. CITY	0.00

- A SURVEY OF THE SITE WAS BY STV, INC. IN JULY 2008. AREAS OUTSIDE THE PROPERTY LINE WERE SURVEYED ON NOVEMBER 19, 2004 BY WHITNEY, BAILEY, COX, WAGHMAN, INC. A BATHYMETRIC SURVEY FOR THE SITE WAS CONDUCTED ON APRIL 19, 2006 BY GUNAWAN AND BRYANT ASSOCIATES, INC.
- BEARINGS AS SHOWN HEREON ARE BASED ON THE BALTIMORE CITY GRID MERIDIAN AS REFERENCE FROM TRAVERSE/CONTROL STATIONS:
24266: SOUTH 12,568.725 WEST 5,223.055
BEARING FROM 24266 TO 24265: N 25°41'21.5" E
- ELEVATIONS AS SHOWN HEREON ARE BASED ON BALTIMORE CITY TRAVERSE STATION:
NO. 5419: BRASS SCREW IN NORTH END OF BOTTOM CONCRETE STEP ENTRANCE 1 STORY BRICK BUILDING AT 2219 ANNAPOLIS ROAD ON NORTHEAST CORNER WHELBURN STREET 0.55' FROM NORTH END AND 0.30' FROM FACE
ELEVATION = 34.687 FEET

TRAVERSE COORDINATES		
NO.	SOUTH	WEST
14	12,664.52	4,395.60
15	13,107.40	4,654.25
16	13,534.74	4,847.84
17	14,063.01	5,115.48
60	13,624.85	4,431.91
61	13,271.49	4,042.20
62	13,033.68	3,925.34

TRAVERSE STATION 17 NOT SHOWN.
CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF ALL TRAVERSE POINTS PRIOR TO CONSTRUCTION IF THEY ARE UTILIZED.



REVISIONS

NO.	DATE	BY	DESCRIPTION

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A CHARTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13653, EXPIRATION DATE: JULY 1, 2013.

**FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION**

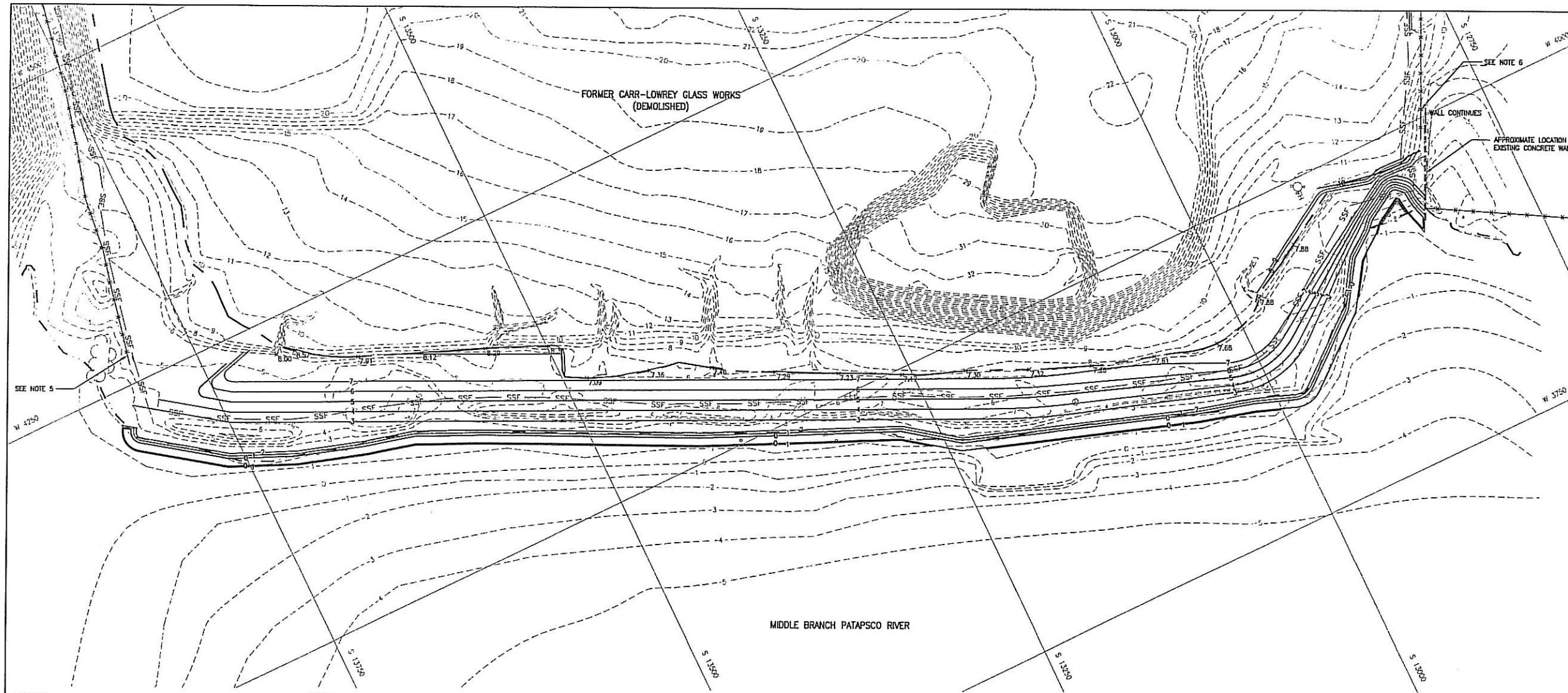
BALTIMORE, MARYLAND

EXISTING CONDITIONS PLAN

**EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY**

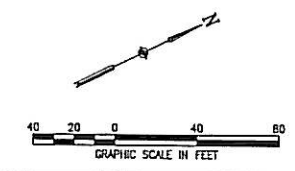
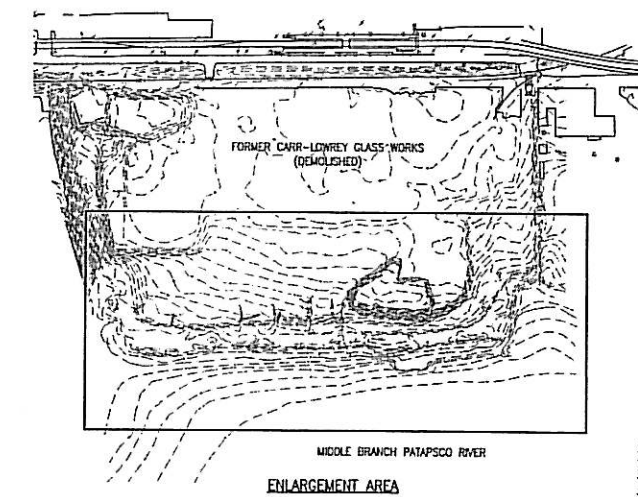
Lovett Center
15 Lovett Circle
Sparks, Maryland 21152
(410) 771-4950

DATE	MARCH 2009
DESIGNED BY	REO
DRAWN BY	JAP
CHECKED BY	CAT
PROJECT MANAGER	JWH
PROJECT NUMBER	14543.01
DRAWING NUMBER	C-1
SHEET NUMBER	2 OF 14

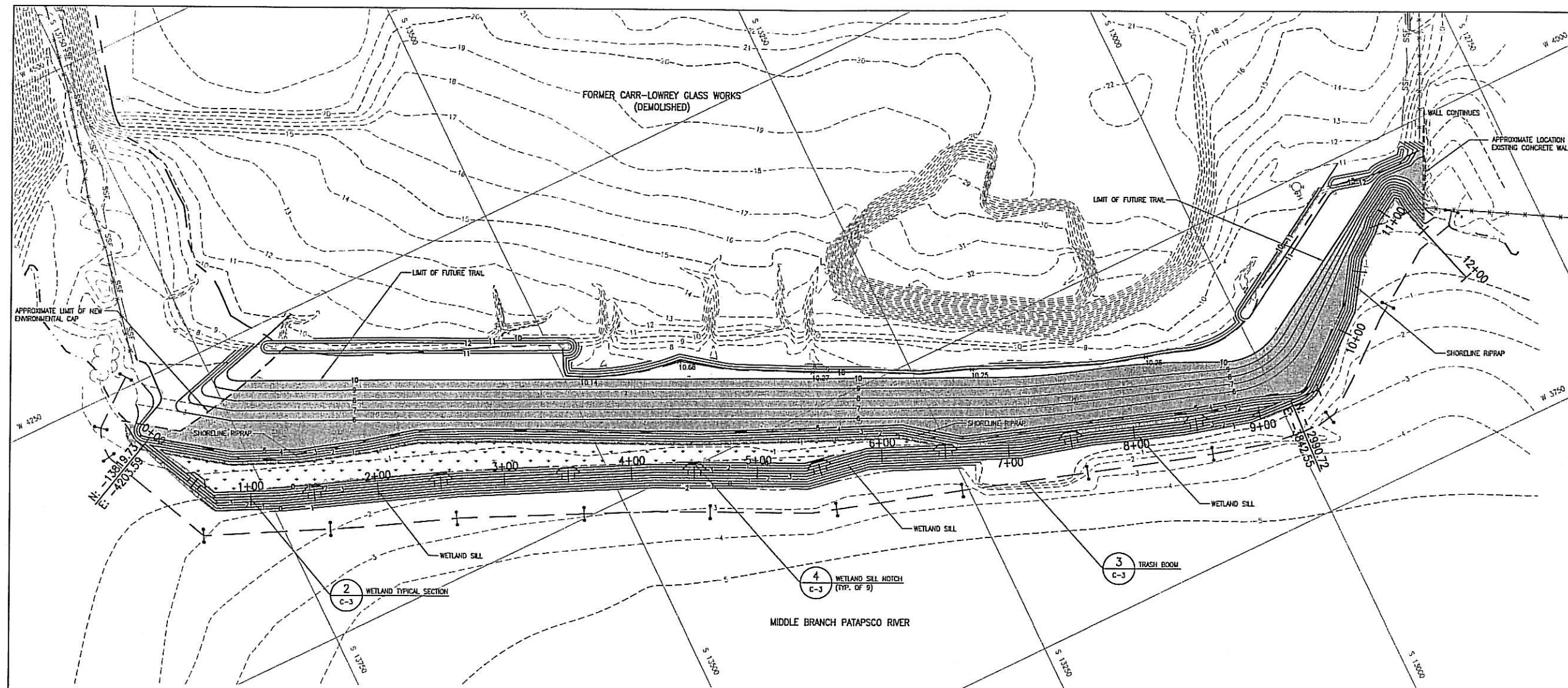


- LEGEND**
- 5- - EXISTING INDEX GRADE CONTOUR
 - 1- - EXISTING GRADE CONTOUR
 - EXISTING ROAD
 - ++++ EXISTING RAILROAD LINE
 - EXISTING STRUCTURE
 - EXISTING WALL
 - EXISTING FENCE
 - EXISTING GUARD RAIL
 - EXISTING TREELINE
 - EXISTING TREE
 - EXISTING UTILITY POLE
 - EXISTING UTILITY GUY WIRE
 - EXISTING UTILITY LIGHT
 - EXISTING MANHOLE
 - EXISTING FIRE HYDRANT
 - EXISTING PANEL
 - EXISTING MONITORING WELL
 - SSF --- SSF EXISTING SUPER SALT FENCE
 - ×7.25 PROPOSED SPOT ELEVATION
 - 5 --- PROPOSED EXCAVATION INDEX CONTOUR
 - 1 --- PROPOSED EXCAVATION INTERMEDIATE CONTOUR
 - APPROXIMATE LIMIT OF EXISTING ENVIRONMENTAL CAP
 - MEAN HIGH WATER LINE

- NOTES**
1. THE SITE IS SUBJECT TO A RESPONSE ACTION PLAN (RAP) WHICH HAS BEEN APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) VOLUNTARY CLEANUP PROGRAM (VCP).
 2. ANY CONSTRUCTION DOCUMENT REVISIONS SHALL BE EQUALLY PROTECTIVE OF HUMAN HEALTH AS SHOWN IN THIS DESIGN DOCUMENT.
 3. EXISTING MATERIAL ABOVE THE GRADE SHOWN ON THIS PLAN MUST BE EXCAVATED AND MARKED AS IMPACTED MATERIAL. IMPACTED MATERIALS FROM THE SITE MAY BE USED AS FILL BELOW THE GRADES SHOWN ON THIS PLAN. ALL FILL MATERIAL ABOVE THE GRADES SHOWN ON THIS PLAN MUST BE CERTIFIED AS CLEAN BY MDE.
 4. CONSTRUCTION EQUIPMENT WORKING ON IMPACTED SOIL MUST BE CLEANED BEFORE MOVING ON TOP OF THE CLEAN SOIL. CLEANING REQUIREMENTS ARE DETAILED IN SPECIFICATION 31 00 00.
 5. NO FILL MATERIALS SHALL BE TRANSPORTED TO OR FROM THE LANDWARD AREA OF THE SITE WITHOUT WRITTEN APPROVAL FROM MDE.
 6. CONTRACTOR SHALL REMOVE EXISTING FENCE AS NEEDED TO ACCOMMODATE CONSTRUCTION SHOWN.

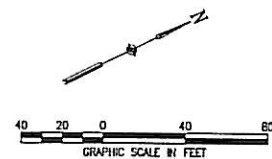
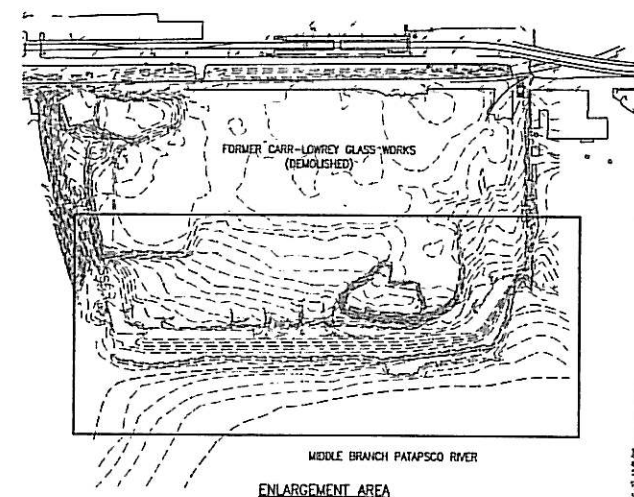


REVISIONS NO. DATE BY DESCRIPTION	
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15151, EXPIRATION DATE: JULY 3, 2025.	
FORMER CARR-LOWREY GLASS WORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION BALTIMORE, MARYLAND SUBGRADE PLAN	
EA ENGINEERING, SCIENCE, AND TECHNOLOGY Lovett Center 15 Lovett Circle Sparks, Maryland 21152 (410) 771-4950	
DATE	MARCH 2009
DESIGNED BY	REC
DRAWN BY	REC
CHECKED BY	CAT
PROJECT MANAGER	JWH
PROJECT NUMBER	14543.01
DRAWING NUMBER	C-1
SHEET NUMBER	3 OF 14

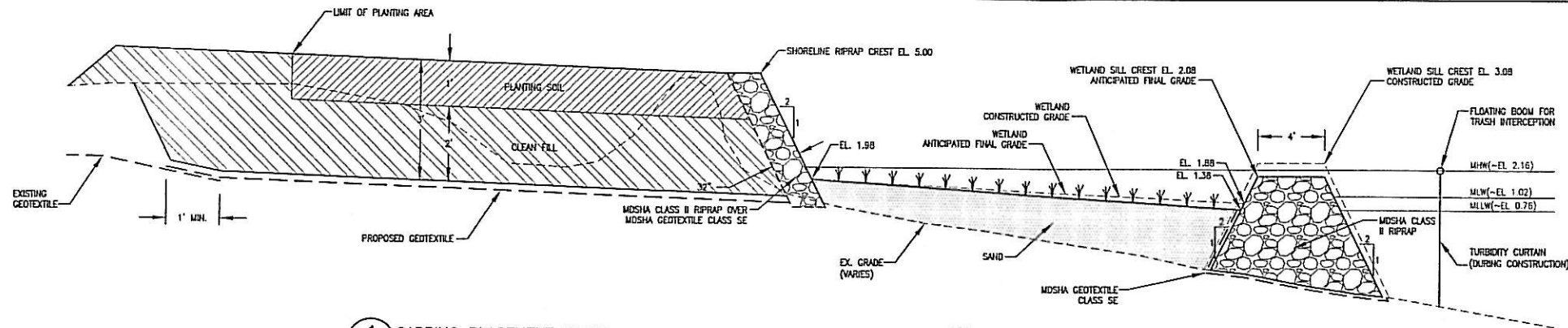


LEGEND	
---	EXISTING INDEX GRADE CONTOUR
---	EXISTING GRADE CONTOUR
---	EXISTING ROAD
---	EXISTING RAILROAD LINE
---	EXISTING STRUCTURE
---	EXISTING WALL
---	EXISTING FENCE
---	EXISTING GUARD RAIL
---	EXISTING TREELINE
---	EXISTING TREE
---	EXISTING UTILITY POLE
---	EXISTING UTILITY GUY WIRE
---	EXISTING UTILITY LIGHT
---	EXISTING MANHOLE
---	EXISTING FIRE HYDRANT
---	EXISTING PANEL
---	EXISTING MONITORING WELL
---	EXISTING SUPER SILT FENCE
---	PROPOSED SPOT ELEVATION
---	PROPOSED EXCAVATION INDEX CONTOUR
---	PROPOSED EXCAVATION INTERMEDIATE CONTOUR
---	APPROXIMATE LIMIT OF EXISTING ENVIRONMENTAL CAP
---	APPROXIMATE LIMIT OF NEW ENVIRONMENTAL CAP
---	MEAN HIGH WATER LINE
---	PROPOSED WETLAND SILL AND NOTCH
---	PROPOSED RIPRAP
---	PROPOSED WETLANDS
---	PROPOSED TRASH BOOM
---	PLANTING SOIL AREA

- NOTES**
1. THE SITE IS SUBJECT TO A RESPONSE ACTION PLAN (RAP) WHICH HAS BEEN APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) VOLUNTARY CLEANUP PROGRAM (VCP). THE RAP DETAILS THE ENVIRONMENTAL ENGINEERING CONTROLS FOR THE SITE.
 2. ANY CONSTRUCTION DOCUMENT REVISIONS SHALL BE EQUALLY PROTECTIVE OF HUMAN HEALTH AS SHOWN IN THIS DESIGN DOCUMENT.
 3. FILL MATERIALS USED FOR THE CONSTRUCTION OF THE SHORELINE RIPRAP SHALL CONFORM TO THE CLEAN FILL SPECIFICATIONS OF THE RESPONSE ACTION PLAN MODIFICATION.
 4. NO FILL MATERIALS SHALL BE TRANSPORTED TO OR FROM THE LANDWARD AREA OF THE SITE, INCLUDING THE SHORELINE RIPRAP, WITHOUT WRITTEN APPROVAL FROM MDE.
 5. REFER TO SHEET PR-1 FOR THE WETLAND SILL PROFILE.
 6. REFER TO SHEETS CS-1 THROUGH CS-3 FOR CROSS SECTIONS ALONG THE BASELINE OF CONSTRUCTION.



REVISIONS NO. BY DATE 1. PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15533, EXPIRATION DATE: JULY 2, 2008.	
FORMER CARR-LOWREY GLASS WORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION BALTIMORE, MARYLAND WETLAND DESIGN PLAN	
EA ENGINEERING, SCIENCE, AND TECHNOLOGY Loveston Center 15 Loveston Circle Sparks, Maryland 21152 (410) 771-4050	
DATE	MARCH 2003
DESIGNED BY	REG
DRAWN BY	REG
CHECKED BY	GAT
PROJECT MANAGER	JMH
PROJECT NUMBER	14543.01
DRAWING NUMBER	C-2
SHEET NUMBER	4 OF 14

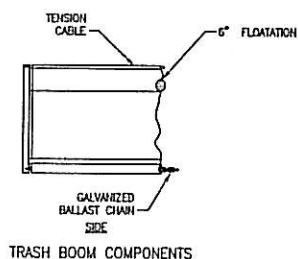


1 CAPPING PLACEMENT DETAIL
C-2
NOT TO SCALE

1. CLEAN FILL IS AVAILABLE ON OR ADJACENT TO THE SITE.
2. PLANTING SOIL SHALL CONSIST OF 2/3 TOPSOIL AND 1/3 HUMUS, COMPOSTED SLUDGE OR OTHER ORGANIC MATERIAL AND WILL BE AVAILABLE ON OR ADJACENT TO THE SITE.
3. OWNER WILL PROVIDE CLEAN FILL AND PLANTING SOIL AT NO COST TO THE CONTRACTOR.

2 WETLAND TYPICAL SECTION
C-2
NOT TO SCALE

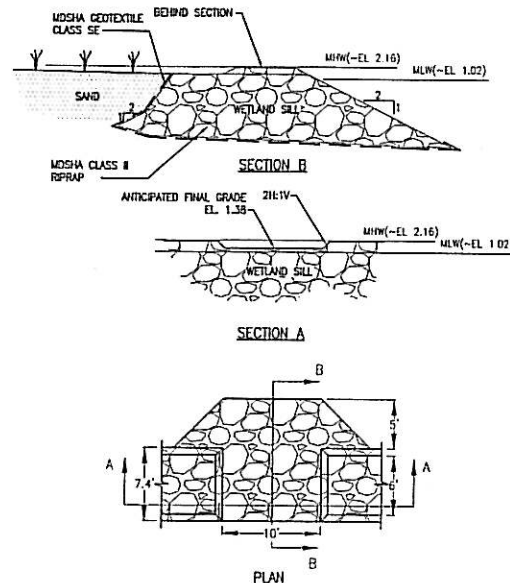
1. SAND SHALL CONFORM TO AASHTO NO. 6 AGGREGATE.
2. FILL MATERIALS USED FOR THE CONSTRUCTION OF THE SHORELINE RIPRAP SHALL CONFORM TO THE CLEAN FILL SPECIFICATIONS OF THE RESPONSE ACTION PLAN MODIFICATION.



TRASH BOOM COMPONENTS

- CONSTRUCTION SPECIFICATIONS
1. CONTRACTOR SHALL USE OPTIMAX 1 CONTAINMENT BOOM OR APPROVED EQUAL. THE MANUFACTURER'S GUIDELINES FOR THE USE, INSTALLATION, MAINTENANCE, AND REMOVAL OF THEIR SPECIFIC TURBIDITY BARRIERS SHALL BE FOLLOWED.
 2. ANCHORAGE SYSTEM SHALL BE COMPATIBLE WITH THE TURBIDITY BARRIER UTILIZED DURING CONSTRUCTION AS INDICATED ON SHEETS ES-1, ES-2, AND ES-3.
 3. CONTRACTOR SHALL FURNISH AND INSTALL FOUR SELF-CONTAINED, SOLAR-POWERED MARKER LIGHTS AND ACCOMPANYING BUOYS FOR PERMANENT INSTALLATION ALONG THE LENGTH OF THE TRASH BOOM. LIGHTS SHALL PROVIDE 5 YEARS OF MAINTENANCE-FREE SERVICE AND SHALL OPERATE FOR 150 HOURS MINIMUM ON A SINGLE CHARGE. LIGHTS SHALL BE VISIBLE FOR UP TO 1 NAUTICAL MILE.

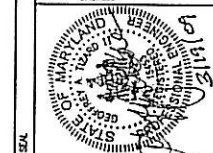
3 TRASH BOOM
C-1
NOT TO SCALE



4 WETLAND SILL NOTCH
C-2
NOT TO SCALE

REVISIONS
DESCRIPTION
BY
DATE
NO.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15553, EXPIRATION DATE: JULY 2, 2009.



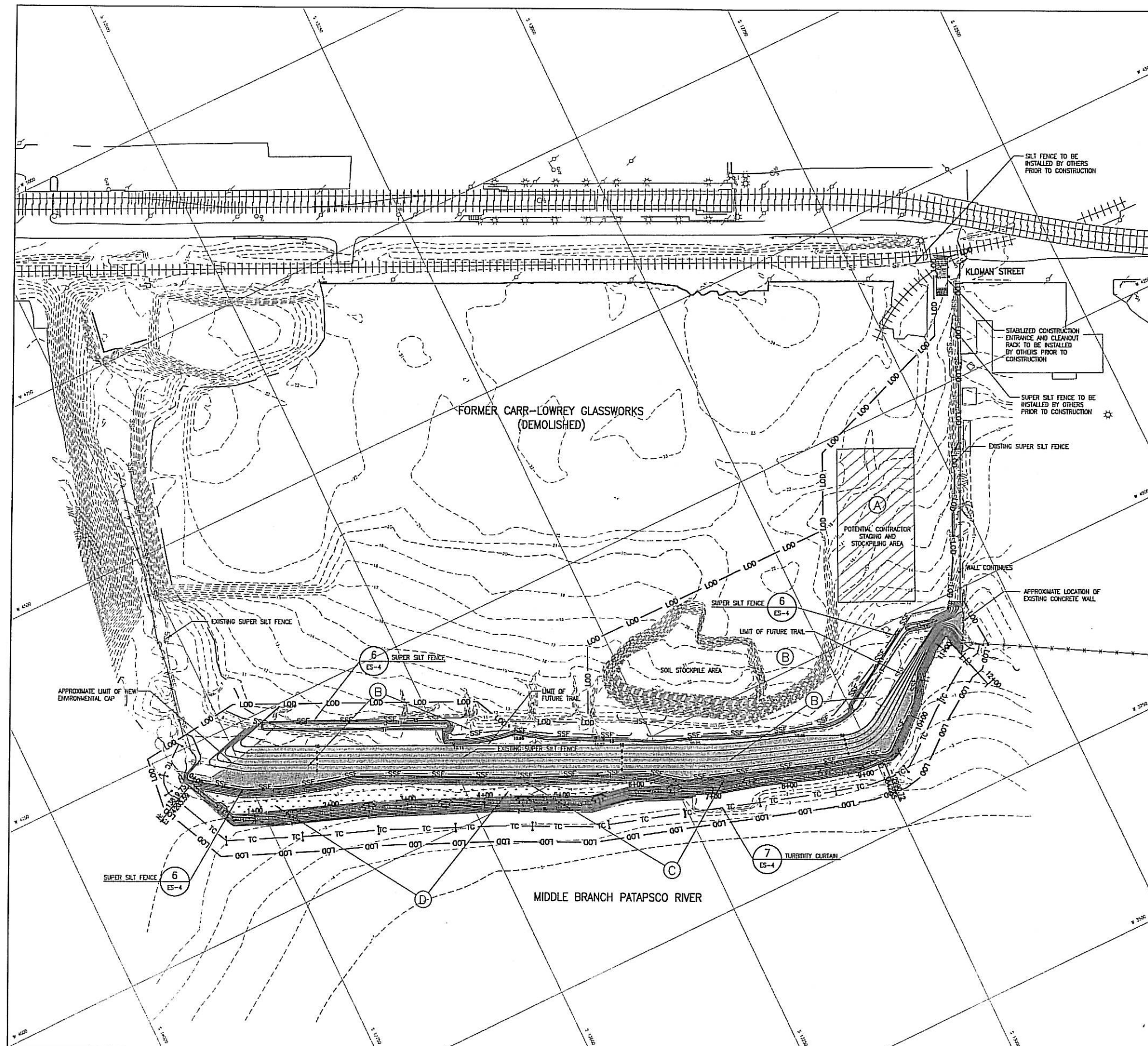
FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION

BALTIMORE, MARYLAND

MISCELLANEOUS DETAILS

EA
ENGINEERING,
SCIENCE AND
TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

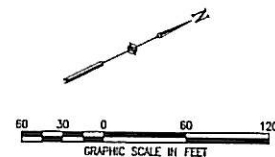
DATE: MARCH 2009
DESIGNED BY: RED
DRAWN BY: RED
CHECKED BY: CAT
PROJECT MANAGER: JMH
PROJECT NUMBER: 14543.01
DRAWING NUMBER: C-3
SHEET NUMBER: 5 OF 14



LEGEND

---	EXISTING INDEX GRADE CONTOUR
---	EXISTING GRADE CONTOUR
---	EXISTING ROAD
---	EXISTING RAILROAD LINE
---	EXISTING STRUCTURE
---	EXISTING WALL
---	EXISTING FENCE
---	EXISTING GUARD RAIL
---	EXISTING TREELINE
---	EXISTING TREE
---	EXISTING UTILITY POLE
---	EXISTING UTILITY GUY WIRE
---	EXISTING UTILITY LIGHT
---	EXISTING MANHOLE
---	EXISTING FIRE HYDRANT
---	EXISTING PANEL
---	EXISTING MONITORING WELL
---	MEAN HIGH WATER LINE
---	APPROXIMATE LIMIT OF EXISTING ENVIRONMENTAL CAP
---	APPROXIMATE LIMIT OF NEW ENVIRONMENTAL CAP
---	PROPOSED INDEX CONTOUR
---	PROPOSED GRADE CONTOUR
---	PROPOSED WETLAND SILL AND NOTCH
---	PROPOSED WETLAND RIPRAP
---	PROPOSED WETLANDS
---	LOD LOD LIMIT OF DISTURBANCE
---	TC TC PROPOSED TURBIDITY CURTAIN
---	SSF SSF SUPER SILT FENCE
---	SF SF SILT FENCE TO BE INSTALLED BY OTHERS
---	SSF SSF EXISTING SUPER SILT FENCE OR SUPER SILT FENCE TO BE INSTALLED BY OTHERS
---	STABILIZED CONSTRUCTION ENTRANCE TO BE INSTALLED BY OTHERS
---	VEGETATIVE STABILIZATION AREAS (SEE NOTE 3)
---	PLANTING SOIL AREA

- NOTES**
1. DRAWING DEPICTS THE FINAL PHASE EROSION AND SEDIMENT CONTROL MEASURES AND THOSE OVERALL MEASURES FOR THE SITE INCLUDING THOSE ASSOCIATED WITH THE STAGING AREA AND SITE ENTRANCE. REFER TO DRAWINGS ES-1 AND ES-2 FOR ENLARGEMENTS OF THE WORK AREA FOR THE INITIAL AND FINAL PHASES OF THE EROSION AND SEDIMENT CONTROL PLAN.
 2. REFER TO SHEET ES-5 FOR SEQUENCE OF CONSTRUCTION, NOTES AND VEGETATIVE STABILIZATION SPECIFICATIONS.
 3. REFER TO SHEET ES-5 FOR STABILIZATION SCHEDULE.



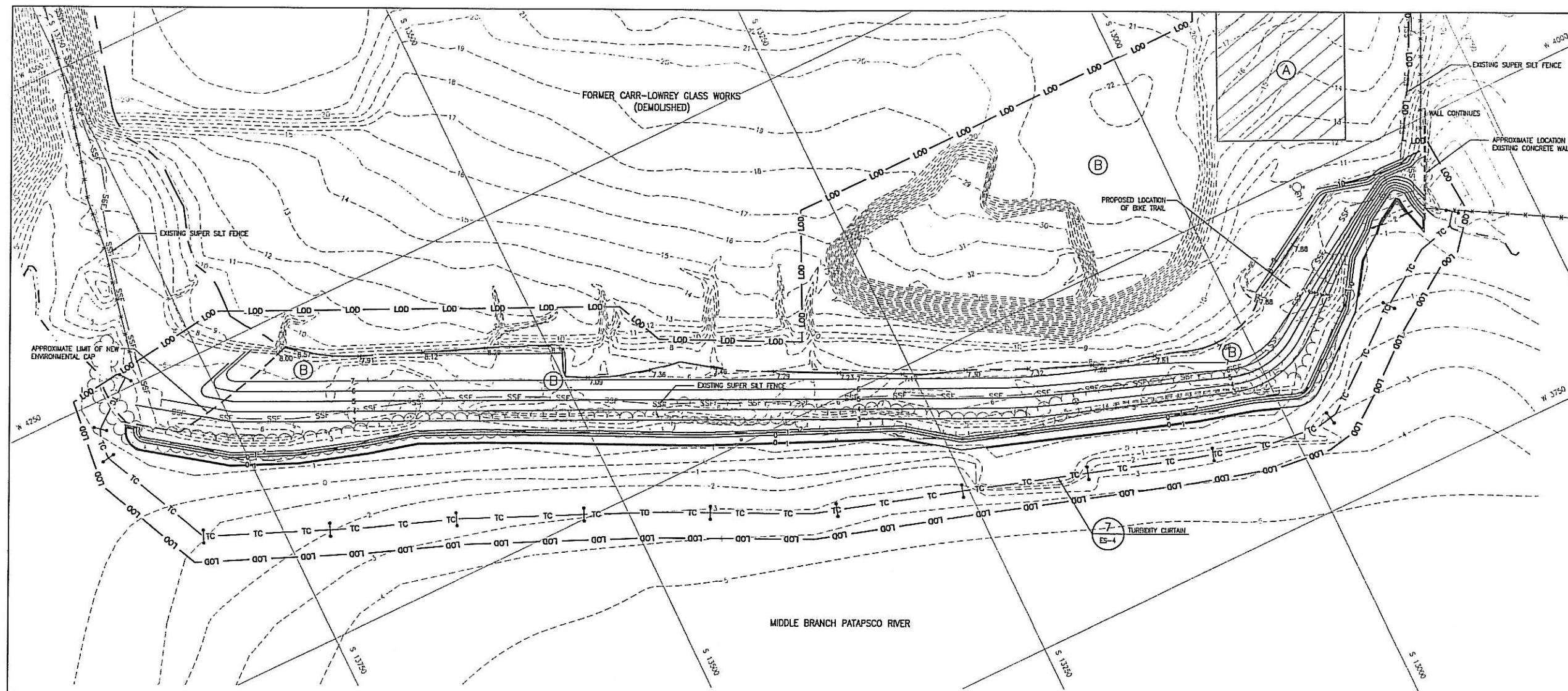
REVISIONS	
NO.	DESCRIPTION

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15651, EXPIRATION DATE: JULY 2, 2009.

EA
EA ENGINEERING, SCIENCE, AND TECHNOLOGY
Lovett Center
15 Lovett Circle
Sparks, Maryland 21152
(410) 771-4950

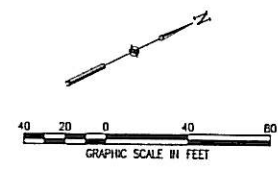
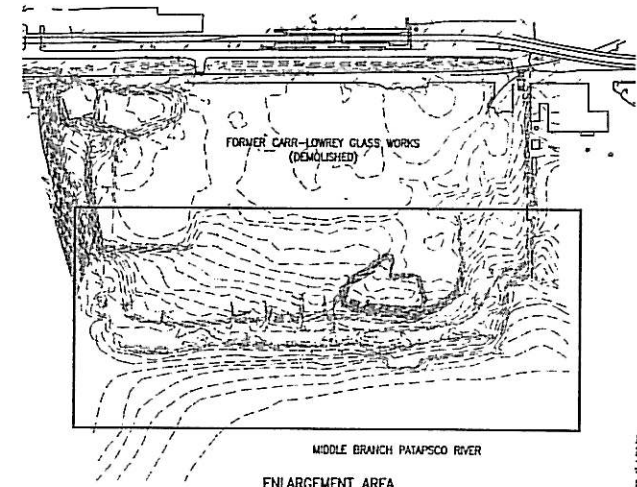
DATE: MARCH 2009
DESIGNED BY: MP
DRAWN BY: JAP
CHECKED BY: CAT
PROJECT MANAGER: JWH
PROJECT NUMBER: 14543.01
DRAWING NUMBER: ES-1
SHEET NUMBER: 6 OF 14

FORMER CARR-LOWREY GLASSWORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION
BALTIMORE, MARYLAND
OVERALL EROSION AND SEDIMENT CONTROL PLAN



- LEGEND**
- 5- - - - - EXISTING INDEX GRADE CONTOUR
 - - - - - EXISTING GRADE CONTOUR
 - — — — — EXISTING ROAD
 - — — — — EXISTING RAILROAD LINE
 - — — — — EXISTING STRUCTURE
 - — — — — EXISTING WALL
 - — — — — EXISTING FENCE
 - — — — — EXISTING GUARD RAIL
 - — — — — EXISTING TREELINE
 - — — — — EXISTING TREE
 - — — — — EXISTING UTILITY POLE
 - — — — — EXISTING UTILITY GUY WIRE
 - — — — — EXISTING UTILITY LIGHT
 - — — — — EXISTING MANHOLE
 - — — — — EXISTING FIRE HYDRANT
 - — — — — EXISTING PANEL
 - — — — — EXISTING MONITORING WELL
 - — — — — EXISTING SUPER SILT FENCE
 - — — — — MEAN HIGH WATER LINE
 - — — — — APPROXIMATE LIMIT OF EXISTING ENVIRONMENTAL CAP
 - — — — — APPROXIMATE LIMIT OF NEW ENVIRONMENTAL CAP
 - — — — — PROPOSED INDEX CONTOUR
 - — — — — PROPOSED GRADE CONTOUR
 - — — — — LIMIT OF DISTURBANCE
 - — — — — PROPOSED TURBIDITY CURTAIN
 - — — — — VEGETATIVE STABILIZATION AREAS (SEE NOTE 2)

- NOTES**
1. REFER TO SHEET ES-5 FOR SEQUENCE OF CONSTRUCTION, NOTES AND VEGETATIVE STABILIZATION SPECIFICATIONS.
 2. REFER TO SHEET ES-5 FOR STABILIZATION SCHEDULE.



REVISIONS	
NO.	DESCRIPTION

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15553, EXPIRATION DATE: JULY 1, 2009.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

DATE: MARCH 2009

DESIGNED BY: MP

DRAWN BY: MP

CHECKED BY: GAT

PROJECT MANAGER: JMH

PROJECT NUMBER: 14543.01

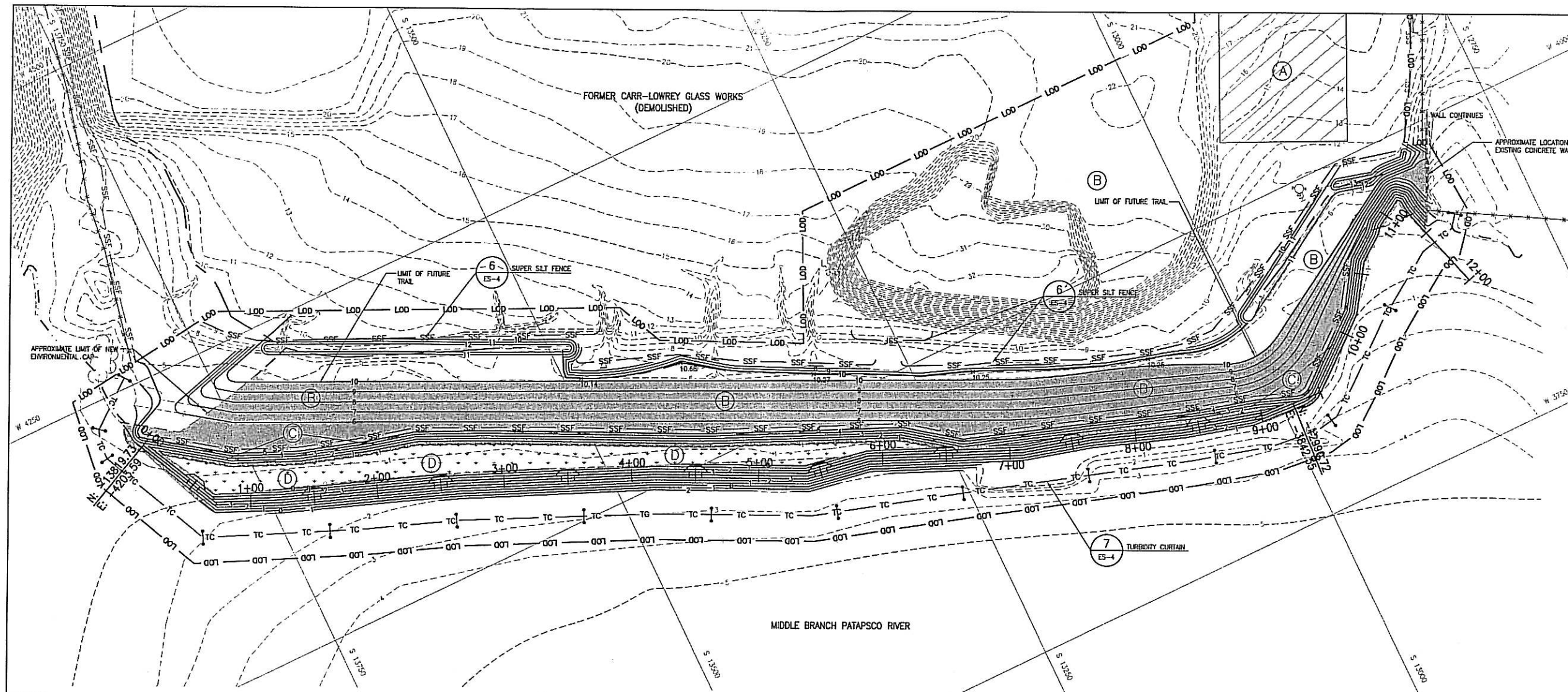
DRAWING NUMBER: ES-2

SHEET NUMBER: 7 OF 14

FORMER CARR-LOWREY GLASS WORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION

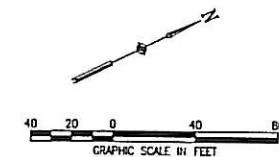
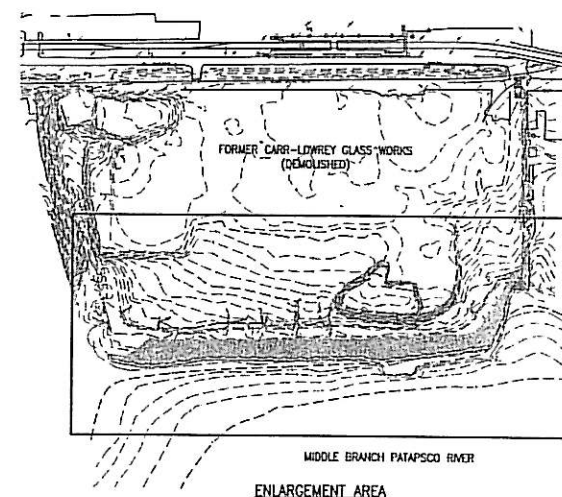
BALTIMORE, MARYLAND

EROSION & SEDIMENT CONTROL PLAN - INITIAL PHASE

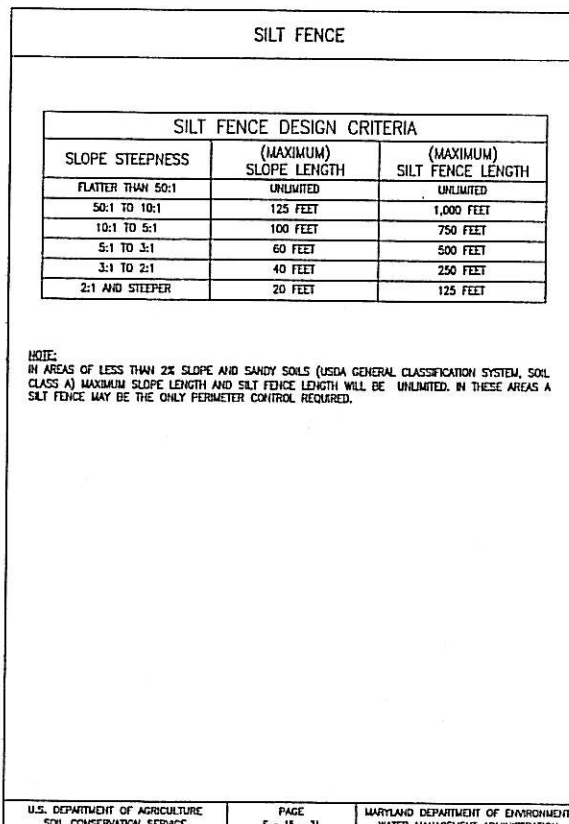
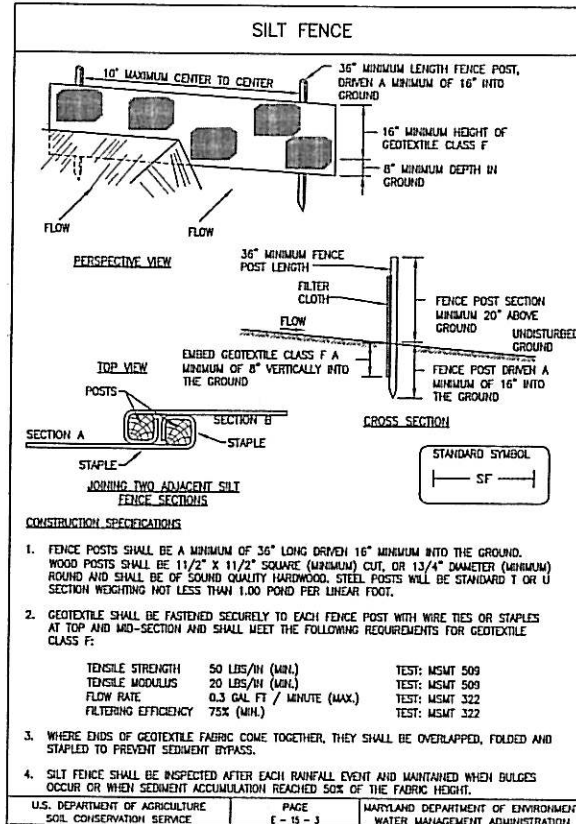


- LEGEND**
- 5- - - - - EXISTING INDEX GRADE CONTOUR
 - 1- - - - - EXISTING GRADE CONTOUR
 - — — — — EXISTING ROAD
 - — — — — EXISTING RAILROAD LINE
 - — — — — EXISTING STRUCTURE
 - — — — — EXISTING WALL
 - — — — — EXISTING FENCE
 - — — — — EXISTING GUARD RAIL
 - — — — — EXISTING TREELINE
 - — — — — EXISTING TREE
 - — — — — EXISTING UTILITY POLE
 - — — — — EXISTING UTILITY GUY WIRE
 - — — — — EXISTING UTILITY LIGHT
 - — — — — EXISTING MANHOLE
 - — — — — EXISTING FIRE HYDRANT
 - — — — — EXISTING PANEL
 - — — — — EXISTING MONITORING WELL
 - — — — — EXISTING SUPER SILT FENCE
 - — — — — MEAN HIGH WATER LINE
 - — — — — PROPOSED INDEX CONTOUR
 - — — — — PROPOSED GRADE CONTOUR
 - — — — — PROPOSED WETLAND SILL AND NOTCH
 - — — — — PROPOSED WETLAND RIPRAP
 - — — — — PROPOSED WETLANDS
 - — — — — LIMIT OF DISTURBANCE
 - — — — — PROPOSED TURBIDITY CURTAIN
 - — — — — SUPER SILT FENCE
 - — — — — VEGETATIVE STABILIZATION AREAS (SEE NOTE 2)

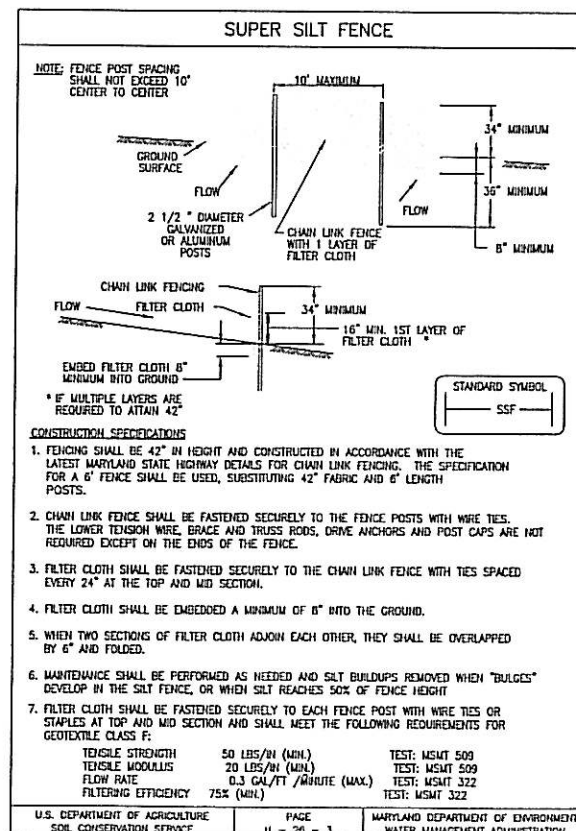
- NOTES**
1. REFER TO SHEET ES-5 FOR SEQUENCE OF CONSTRUCTION, NOTES AND VEGETATIVE STABILIZATION SPECIFICATIONS.
 2. REFER TO SHEET ES-5 FOR STABILIZATION SCHEDULE.



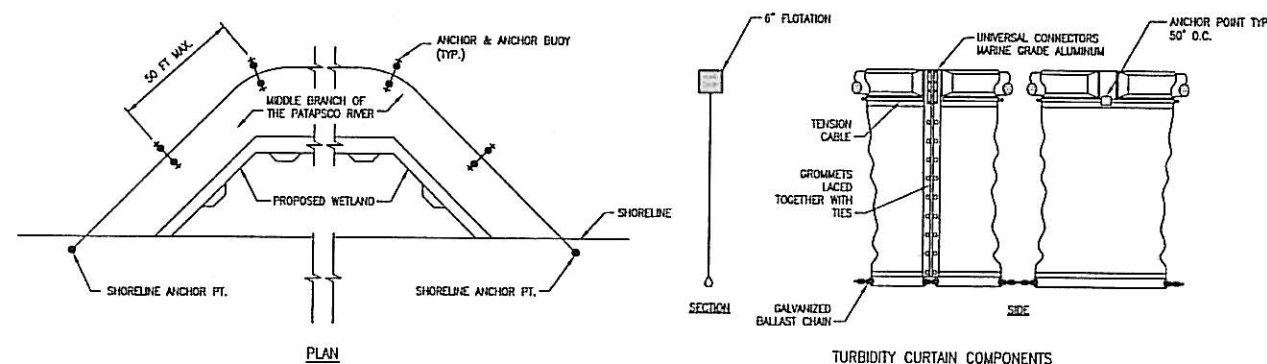
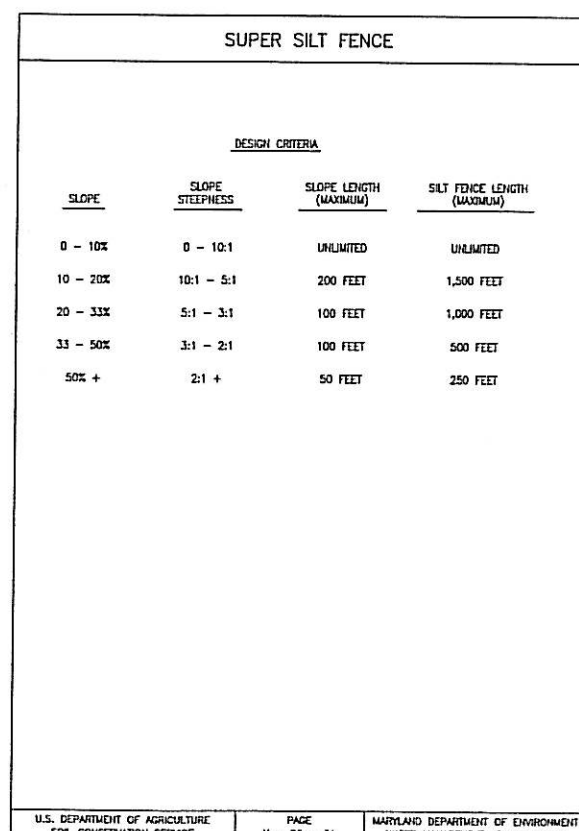
<p>PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 15551, EXPIRATION DATE: MAY 2, 2021.</p>	
<p>SEAL</p>	
<p>FORMER CARR-LOWREY GLASS WORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION</p>	
<p>BALTIMORE, MARYLAND</p>	
<p>EROSION & SEDIMENT CONTROL PLAN - FINAL PHASE</p>	
<p>EA EA ENGINEERING, SCIENCE, AND TECHNOLOGY</p>	
<p>Leveton Center 15 Leveton Circle Sparks, Maryland 21152 (410) 771-4950</p>	
DATE	MARCH 2009
DESIGNED BY	MP
DRAWN BY	MP
CHECKED BY	CAT
PROJECT MANAGER	JRH
PROJECT NUMBER	14543.01
DRAWING NUMBER	ES-3
SHEET NUMBER	8 OF 14



5 SILT FENCE
ES-1 NOT TO SCALE



6 SUPER SILT FENCE
ES-1 NOT TO SCALE



7 TURBIDITY CURTAIN
ES-2, ES-3 NOT TO SCALE

REVISIONS	
NO.	DESCRIPTION

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15443, EXPIRATION DATE: JULY 2, 2009.

FORMER CARR-LOWREY GLASS WORKS PROPERTY WETLAND AND SHORELINE CAP CONSTRUCTION

BALTIMORE, MARYLAND

EROSION & SEDIMENT CONTROL DETAILS

EA ENGINEERING, SCIENCE AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

DATE: MARCH 2009
DESIGNED BY: MP
DRAWN BY: RED
CHECKED BY: CAT
PROJECT MANAGER: JWH
PROJECT NUMBER: 14543.01
DRAWING NUMBER: ES-4
SHEET NUMBER: 9 OF 14

CITY OF BALTIMORE STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION
(TO BE USED IN UPLAND AREAS ONLY)

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. SITE PREPARATION

- INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (OTHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
- PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.
- SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES.

B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

- SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE OR TRADEMARK AND WARRANT OF THE PRODUCER.
- LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE AND 95 - 100% WILL PASS THROUGH A #20 MESH SIEVE.

- INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION

1. TEMPORARY SEEDING

- SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

II. PERMANENT SEEDING

- MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
 - SOIL PH SHALL BE BETWEEN 6.0 AND 7.0
 - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% S&T PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LONGGRASS OR SERPENT LEPIDOPTERA IS TO BE PLANTED, THEN A SANDY SOIL (<30% S&T PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL.
- AREAS PREVIOUSLY GRADED ON CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 - 5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.
- APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.
- MIX SOIL AMENDMENTS INTO THE TOP 3 - 5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE GRADED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 3 - 3" OF SOIL SHOULD BE LOOSE AND FRABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS

- ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.

NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.

- INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURE SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER, AND FRESH INOCULANT IS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75-80 DEGREES F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

E. METHODS OF SEEDING

- HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTPACKER SEEDER.
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES WILL NOT EXCEED THE FOLLOWING: NITROGEN: MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS): 200 LBS./AC; K2O (POTASSIUM): 200 LBS./AC.
 - LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE, (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

- SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

II. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

- SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 25 OR 26 OF THE 1994 SEDIMENT CONTROL MANUAL. THE SEEDING AREA SHALL BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

III. DRILL OR CULTPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

- CULTPACKER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
- WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)

- STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLLY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.
- WOOD CELLULOSE FIBER MULCH (WCFM)

- WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
- WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMITY OF SPREAD SLURRY.
- WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
- WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
- WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
- WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM, DIAMETER APPROXIMATELY 1 MM, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.5% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

G. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

- IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

- WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.

- WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

II. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD:

- A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.
- WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SUCH AS ACRYLIC ULR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II, TERRA TACK III OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.

- LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

TEMPORARY SEEDING SUMMARY

Seed Mixture (Hardiness Zone 7a) From Table 26				Fertilizer Rate (10-10-10)	Lime Rate
Species	Application Rate(lb/ac)	Seeding Dates	Seeding Depths		
Barley or Cereal Rye and Fescue Millet	150	2/1-10/15	1"	800 lb/ac (15lb/1000sf)	2 tons/ac (100lb/1000sf)

PERMANENT SEEDING SUMMARY

Seed Mixture (Hardiness Zone 7a) From Table 25				Fertilizer Rate (10-20-20)			Lime Rate
MIX NO.3 Species	Application Rate(lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
Reed Canarygrass (75%)	40						
Redtop(6%)	3	3/1-5/15	1.0	90 lb/ac (2 lb/1000 sf)	75 lb/ac (4 lb/1000 sf)	175 lb/ac (4 lb/1000 sf)	2 tons/ac (100 lb/1000 sf)
Birdfoot* (19%)	10	8/15-11/15					

* LEGUMINOUS SEEDS SHALL BE INOCULATED OR TREATED WITH UNEXPIRED APPROVED CULTURE FOR THE SPECIFIC LEGUME, IN THE PROPER PROPORTIONS, AS SPECIFIED ON THE PACKAGE LABEL. THE INOCULANT SHALL BE STORED AT ROOM TEMPERATURE, OUT OF DIRECT SUNLIGHT AND AWAY FROM HEATING UNITS. WHEN SEEDING DRY WITH MECHANICAL SEEDERS, THOROUGHLY MIX THE POWDER FOR OF THE INOCULANT WITH THE SEED BY WETTING THE SEED WITH A SMALL AMOUNT OF WATER AND THEN ADDING THE POWDER. THE INOCULATED SEED IS THEN MIXED WITH OTHER SEEDS AND PLANTED WITHIN 48 HOURS. SEEDS INOCULATED WITH LIQUID CULTURES SHALL BE PLANTED WITHIN 24 HOURS. INOCULATED SEED NOT PLANTED WITHIN THE SPECIFIED TIME WILL BE REINOCULATED. WHEN USING HYDRAULIC SEEDERS, USE 10 TIMES THE AMOUNT OF INOCULANT SPECIFIED FOR DRY SEEDING. INOCULATED SEED SHALL NOT BE LEFT EXPOSED TO SUNLIGHT OR LEFT IN A SLURRY FOR MORE THAN ONE HOUR, OTHERWISE REINOCULATION WILL BE NECESSARY.

STABILIZATION SCHEDULE			
AREA	SQ. FT.	STABILIZATION NOTE	SEQUENCE #
A STAGING AREA	20,000	STONE BASE (TEMPORARY)	3
		PERMANENT SEEDING (PERMANENT)	10, 11
B OTHER PERVIOUS AREAS	191,861	TEMPORARY SEEDING (TEMPORARY)	5
		PERMANENT SEEDING (PERMANENT)	7, 10, 11
C SHORELINE AREA	12,005	TEMPORARY SEEDING (TEMPORARY)	5
		RPRAP (PERMANENT)	7
D WETLAND AREA	16,419	NONE* (TEMPORARY)	N/A
		NONE* (PERMANENT)	N/A

* THE WETLAND AREA SHALL NOT RECEIVE ANY TREATMENTS. THE SHADY AREA IS TO REMAIN UNSEEDED FOR FUTURE WETLAND PLANTING THAT WILL BE PERFORMED BY OTHERS.

NOTE: AREAS TO BE VEGETATIVELY STABILIZED TO SATISFY THE 7/14 DAY REQUIREMENT AS PER THE BALTIMORE CITY STANDARD EROSION AND SEDIMENT CONTROL NOTES PROVIDED ON SHEET ES-5.

REPAIRS AND MAINTENANCE

- THE WETLANDS CREATION AREA SHALL BE KEPT FREE OF NON-INVASIVE PLANT SPECIES, SUCH AS PHRAGMITES (COMMON REED).
- ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.
- IF THE STAND PROVIDES LESS THAN 40% GROUND COVERAGE, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER, SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS.
- IF THE STAND PROVIDES BETWEEN 40% AND 94% GROUND COVERAGE, OVERSEEDING AND FERTILIZING USING HALF THE RATES ORIGINALLY APPLIED MAY BE NECESSARY.

BALTIMORE CITY STANDARD EROSION AND SEDIMENT CONTROL NOTES

- THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS OF SEDIMENT AND EROSION CONTROL AS SET FORTH IN THE BALTIMORE CITY SEDIMENT AND EROSION CONTROL MANUAL.
- CONTRACTOR MUST SUBMIT WRITTEN NOTIFICATION SEVENTY-TWO (72) HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR MUST SUBMIT TO BALTIMORE CITY'S DEVELOPMENT CENTER A WRITTEN NOTIFICATION STATING:
 - WHEN CONTRACTOR INTENDS TO BEGIN CONSTRUCTION.
 - SOURCE OF BORROW MATERIAL.
 - DISPOSAL AREA OF SITE MATERIAL.
 - STAGING AND/OR STOCKPILE LOCATION(S).
- INITIAL DISTURBANCE WILL BE LIMITED TO THAT NECESSARY TO GAIN ENTRANCE TO THE SITE AND INSTALL NECESSARY SEDIMENT CONTROL DEVICES AS PER THE APPROVED PLANS.
- ALL SEDIMENT CONTROLS AND CRITICAL SLOPES MUST BE STABILIZED WITHIN SEVEN CALENDAR DAYS. ALL OTHER ACTIVE DISTURBED AREAS ON THE PROJECT SITE MUST BE STABILIZED WITHIN FOURTEEN DAYS.
- ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE WHENEVER POSSIBLE AND CONFINED TO AN AREA WHERE IT WILL NOT OBSTRUCT THE NORMAL COURSE OF DRAINAGE.
- PUMPING OF SEDIMENT LADEN WATER WILL NOT BE ALLOWED UNLESS IT IS FILTERED BY WAY OF AN APPROVED SEDIMENT TRAPPING DEVICE.
- CONTINUOUS INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES IS MANDATORY.
- ANY SEDIMENT CONTROL DEVICES DISTURBED DURING UTILITY CONSTRUCTION MUST BE RESTORED IMMEDIATELY.
- ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO MINIMIZE TRACKING OF MUD ON TO PUBLIC RIGHT-OF-WAYS.
- ANY EARTH, GRAVEL, AND/OR OTHER MATERIAL TRACKED, SPILLED, WASHED ON TO ADJACENT ROADS MUST BE IMMEDIATELY REMOVED AND DISPOSED OF IN A PROPER MANNER. FLUSHING WILL NOT BE PERMITTED. ALL MATERIAL MUST BE REMOVED BY MEANS OF SHOVELING AND SWEEPING.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 5,000 SQ. FT., THE CONTRACTOR SHALL HAVE A BALTIMORE CITY EROSION AND SEDIMENT CONTROL INSPECTOR INSPECT AND APPROVE THE WORK COMPLETED AT THE STAGES OF CONSTRUCTION SPECIFIED BELOW:
 - UPON COMPLETION OF THE INSTALLATION OF THE PERIMETER CONTROLS;
 - DURING ALL GRADING AND BUILDING OPERATIONS;
 - UPON FINAL STABILIZATION OF THE ENTIRE SITE PRIOR TO REMOVAL OF THE SEDIMENT CONTROLS.
- THE CONTRACTOR SHALL NOT DEVIATE FROM THE APPROVED SEDIMENT AND EROSION CONTROL PLAN WITHOUT FIRST RECEIVING APPROVAL FROM THE ENVIRONMENTAL ENGINEERING SECTION. VARIATIONS TO THE ORIGINAL PLAN MUST BE SUBMITTED IN WRITING WITH ALL PROPOSED MODIFICATIONS BEING HIGHLIGHTED. SUBSTANTIAL CHANGES WILL NECESSITATE AMENDMENT OF THE GRADING/BUILDING PERMIT.

SEQUENCE OF CONSTRUCTION

- CONTACT BALTIMORE CITY'S DEVELOPMENT CENTER IN WRITING SEVENTY-TWO HOURS (72) PRIOR TO CONSTRUCTION ACTIVITY AS INDICATED IN NOTE 2 OF THE EROSION AND SEDIMENT CONTROL NOTES.
- REPAIR EXISTING SUPER SILT FENCE WITHIN THE PROJECT WORK AREA ALONG THE NORTHERN AND SOUTHERN BOUNDARIES OF THE SITE. INSTALL TURBIDITY CURTAIN AS DEPICTED ON SHEETS ES-1 AND ES-2. SUPER SILT FENCE SHOWN NEAR SHORELINE (EASTERN SIDE OF THE SITE) IS NOT TO BE INSTALLED UNTIL A LATER PHASE OF CONSTRUCTION.
- ESTABLISH STAGING AND STOCKPILE AREA. TEMPORARILY STABILIZE STAGING AREA WITH STONE, IF NECESSARY.
- REMOVE EXISTING SUPER SILT FENCE AS DETAILED ON SHEET ES-3.
- PERFORM CLEARING, GRUBBING AND TRASH REMOVAL FOR SITE.
- PERFORM EXCAVATION AND GRADE TO THE SUBGRADE CONTOURS INDICATED ON SHEET C-1.
- CONSTRUCT ENVIRONMENTAL CAP AND SHORELINE RPRAP. CONSTRUCT WETLAND SILL. TEMPORARILY STABILIZE DISTURBED AREAS AS INDICATED IN NOTE 4 OF THE EROSION AND SEDIMENT CONTROL NOTES.
- ONCE ENVIRONMENTAL CAP, INCLUDING PLANTING SOIL LAYER, AND SHORELINE RPRAP IS CONSTRUCTED, INSTALL SUPER SILT FENCE JUST LANDWARD OF THE TOP OF SLOPE FOR THE SHORELINE RPRAP AND SUPER SILT FENCE UPGRADE OF LANDWARD LIMIT OF ENVIRONMENTAL CAP AS INDICATED ON SHEET ES-3.
- PERMANENTLY STABILIZE THE PLANTING SOIL COVERAGE AREAS OF THE ENVIRONMENTAL CAP. THE RPRAP FOR THE SHORELINE SHALL SERVE AS THE PERMANENT STABILIZATION FOR THAT AREA. FOOTPRINT OF FUTURE TRAIL SHALL NOT BE VEGETATIVELY STABILIZED, BUT INSTEAD SHALL BE STABILIZED WITH CR-6 STONE.
- PLACE/GRADE WETLAND SAND. THE CONTRACTOR SHALL UTILIZE THE PROPOSED GAPS IN THE PREVIOUSLY INSTALLED SUPER SILT FENCE TO ACCESS THE WETLAND AREA. IF THE WETLAND AREA IS TO BE STABILIZED WITH CR-6 STONE, PERMIT EQUIPMENT ACCESS TO THE WETLAND AREA, THOSE BREAKS SHALL BE ELIMINATED BY RECONSTRUCTING THE SUPER SILT FENCE AT THOSE LOCATIONS AT THE END OF THE WORK DAY.
- THE WETLAND AREA WILL BE PLANTED BY OTHERS AND PLANTING IS NOT INCLUDED IN THIS CONTRACT.
- ONCE ALL CONSTRUCTION IS COMPLETE, THE STAGING AND STOCKPILE AREA SHALL BE DISMANTLED AND ANY DISTURBED AREAS IN THE STAGING AND STOCKPILE AREA AND OTHER PERVIOUS AREAS SHALL BE PERMANENTLY STABILIZED.
- THE TURBIDITY CURTAIN SHALL BE REMOVED AND USE OF THE TURBIDITY CURTAIN AS THE PERMANENT TRASH BOOM WILL BE CONSIDERED. THE PERMANENT TRASH BOOM SHALL BE DETERMINED FROM PRIOR WRITTEN PERMISSION OF THE BALTIMORE CITY INSPECTOR. ANY REMAINING DISTURBED AREAS ASSOCIATED WITH THE RETRIEVAL OF THE TURBIDITY CURTAIN AND DEPLOYMENT OF THE PERMANENT TRASH BOOM SHALL BE PERMANENTLY STABILIZED.

SITE INFO

AREA OF DISTURBANCE: 5.6 AC.
AREA TO BE ROOFED OR PAVED: 0 AC.
TOTAL CUT: 2,500 CY
TOTAL FILL: 12,000 CY

CONSULTANT'S CERTIFICATION:

I DO HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BALTIMORE CITY ENVIRONMENTAL ENGINEERING SECTION.

PRINT NAME	MD LIC. NO.	SIGNATURE	DATE
EA ENGINEERING, SCIENCE AND TECHNOLOGY, INC.			
15 LOVELTON CIRCLE		(410) 771-4850	
SPARKS, MARYLAND 21152		TELEPHONE NUMBER	
ADDRESS			

OWNER'S/DEVELOPER'S CERTIFICATION - SEDIMENT CONTROL:

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED PLAN AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT AN APPROVED DEPARTMENT OF THE ENVIRONMENT TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PRIOR TO THE BEGINNING OF WORK.

PRINT NAME	SIGNATURE	DATE
RIVER HARBOR WEST, LLC		
1700 BEASON STREET		
BALTIMORE, MD	(410) 354-3003	
ADDRESS	TELEPHONE NUMBER	

ENGINEER'S CERTIFICATION - STORMWATER MANAGEMENT:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED BY ME OR UNDER MY SUPERVISION AND MEETS THE MINIMUM STANDARDS OF THE BALTIMORE CITY DEPARTMENT OF PUBLIC WORKS REQUIREMENTS AND SPECIFICATIONS.

PRINT NAME	EA ENGINEERING, SCIENCE AND TECHNOLOGY, INC.	410-771-4850
ADDRESS	15 LOVELTON CIRCLE	PHONE NUMBER
SIGNATURE		
DATE		LICENSE NUMBER

FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION

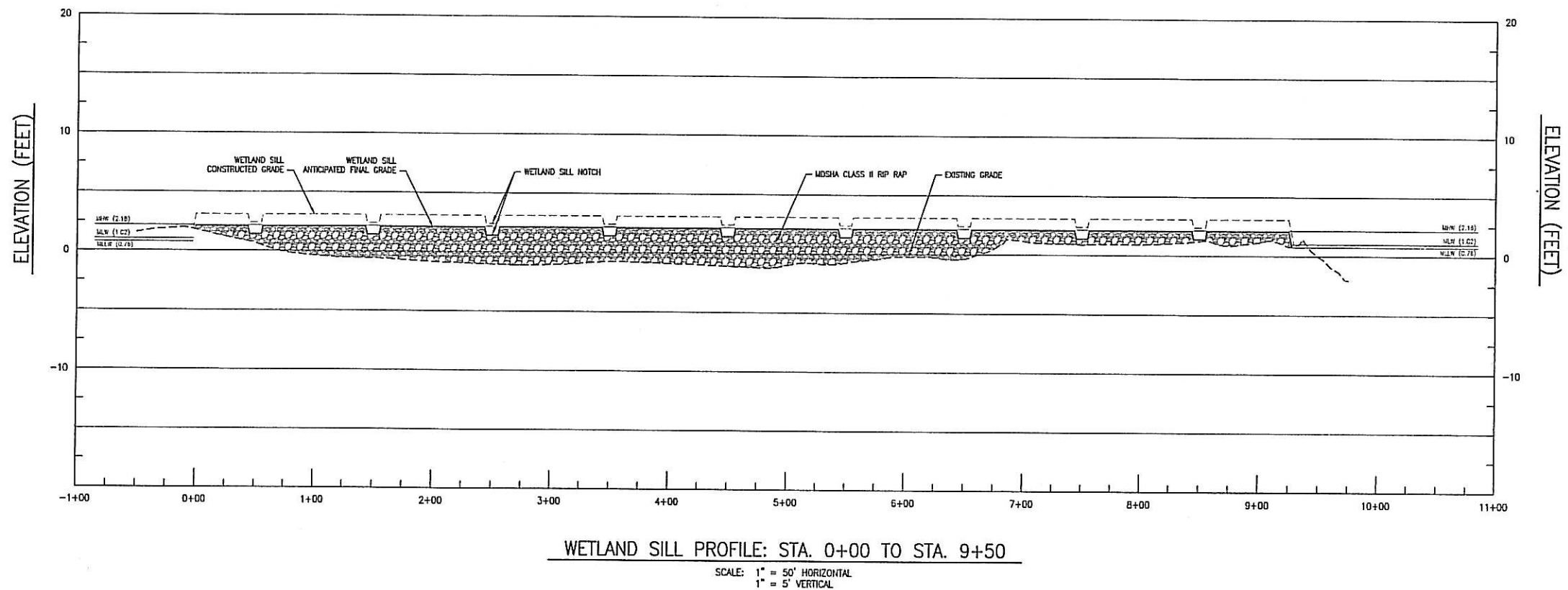
BALTIMORE, MARYLAND

SEQUENCE & VEGETATIVE STABILIZATION SPECIFICATIONS



EA ENGINEERING,
SCIENCE AND
TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4850

DATE	MARCH 2009
DESIGNED BY	MP
DRAWN BY	RED
CHECKED BY	CAT
PROJECT MANAGER	JMH
PROJECT NUMBER	14543.01
DRAWING NUMBER	ES-5
SHEET NUMBER	10 OF 14

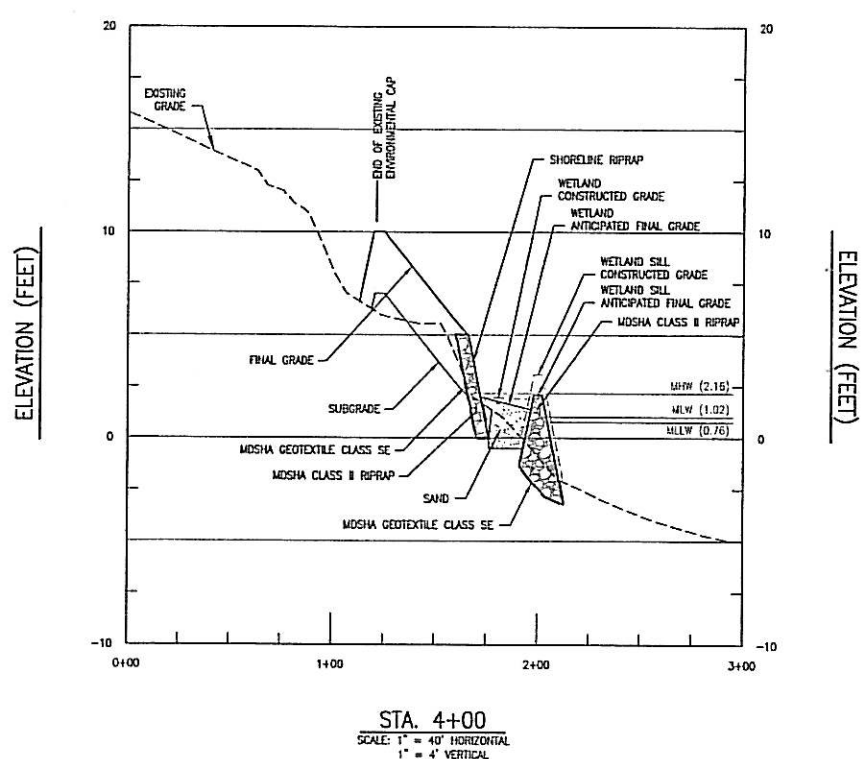
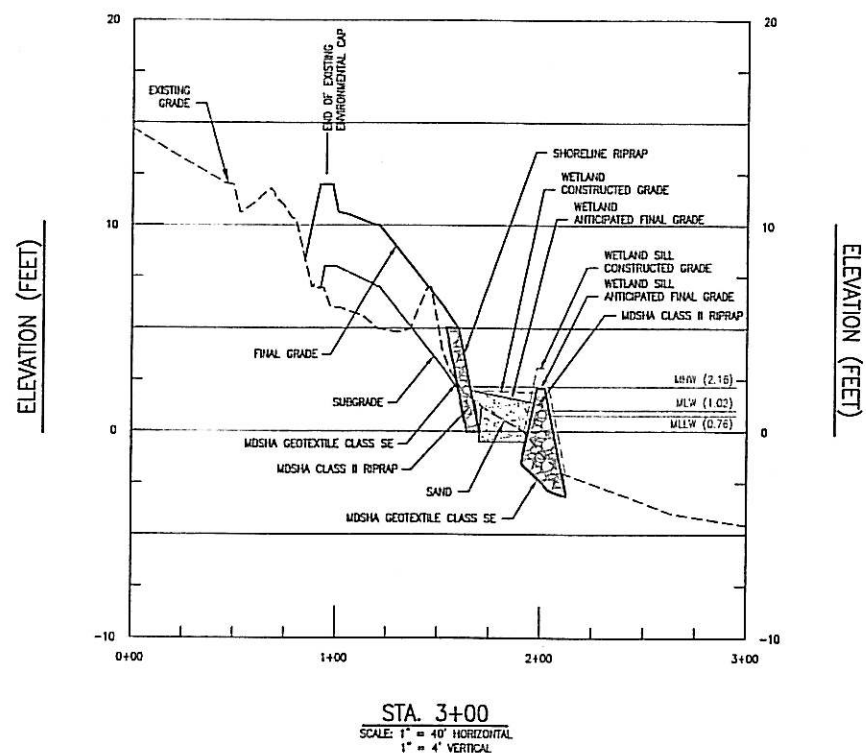
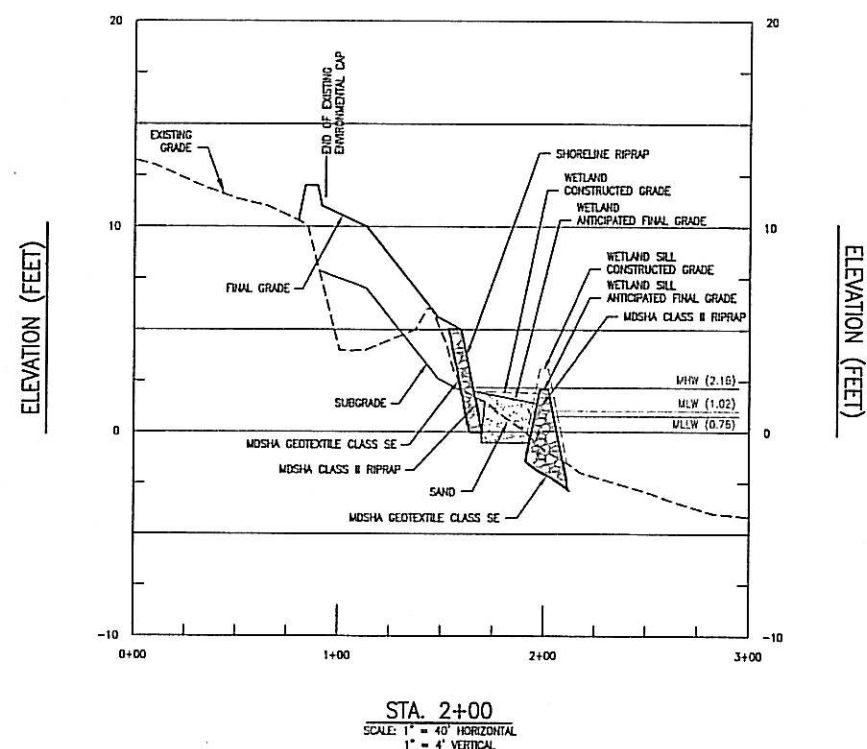
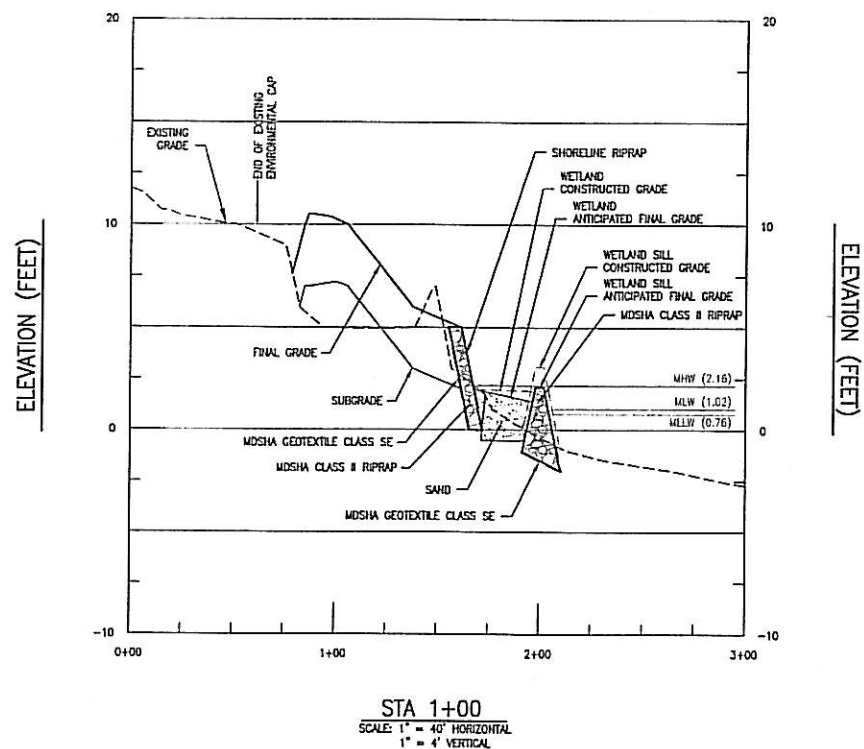


REVISIONS	DESCRIPTION
BY	
DATE	
NO.	

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12453, EXPIRATION DATE: JULY 2, 2009.

FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION
BALTIMORE, MARYLAND
WETLAND SILL PROFILE

EA ENGINEERING, SCIENCE AND TECHNOLOGY
15 Loveton Circle Sparks, Maryland 21152 (410) 771-4950
DATE: MARCH 2009
DESIGNED BY: REO
DRAWN BY: JAP
CHECKED BY: CAT
PROJECT MANAGER: JWH
PROJECT NUMBER: 14543.01
DRAWING NUMBER: PR-1
SHEET NUMBER: 11 OF 14



REVISIONS		DESCRIPTION
NO.	DATE	BY

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15443, EXPIRATION DATE: JULY 7, 2009.

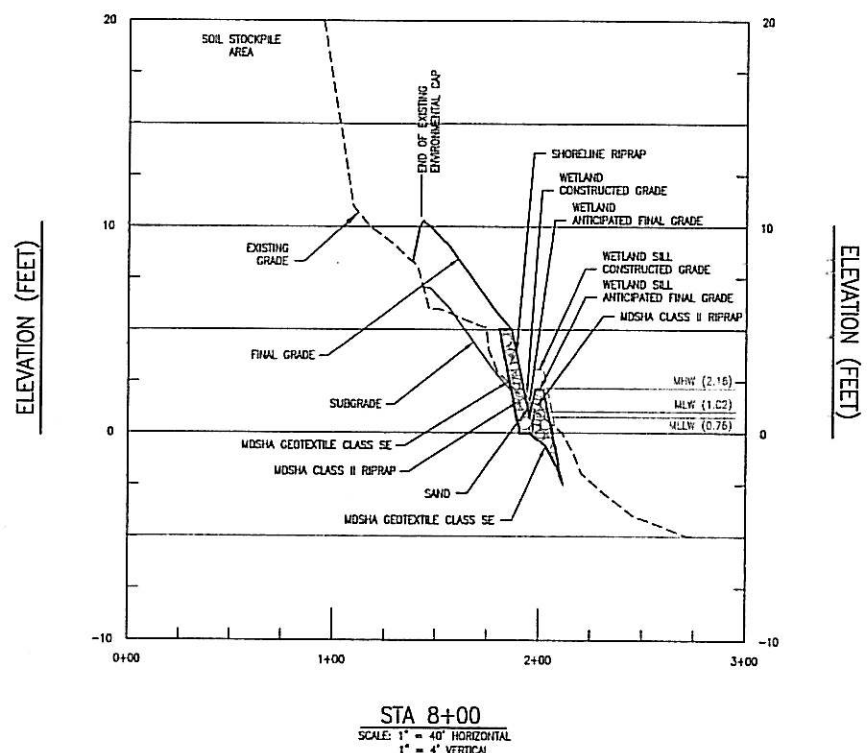
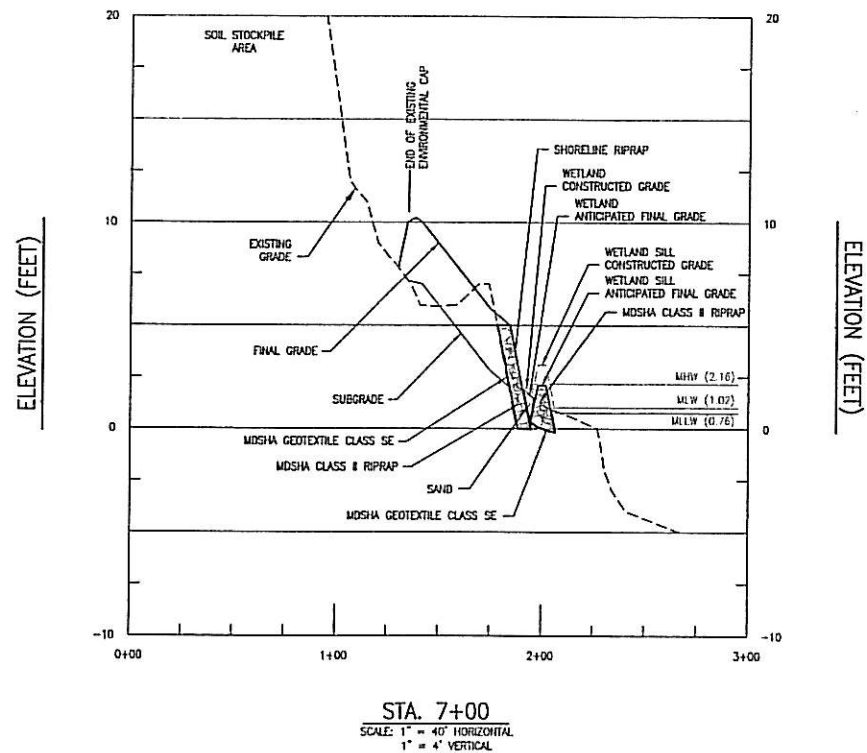
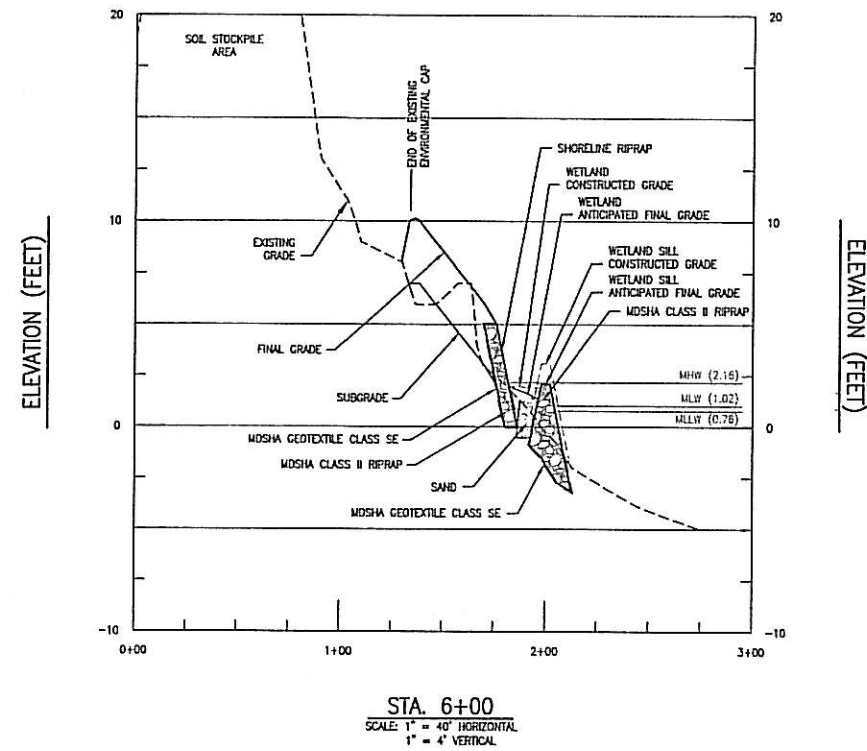
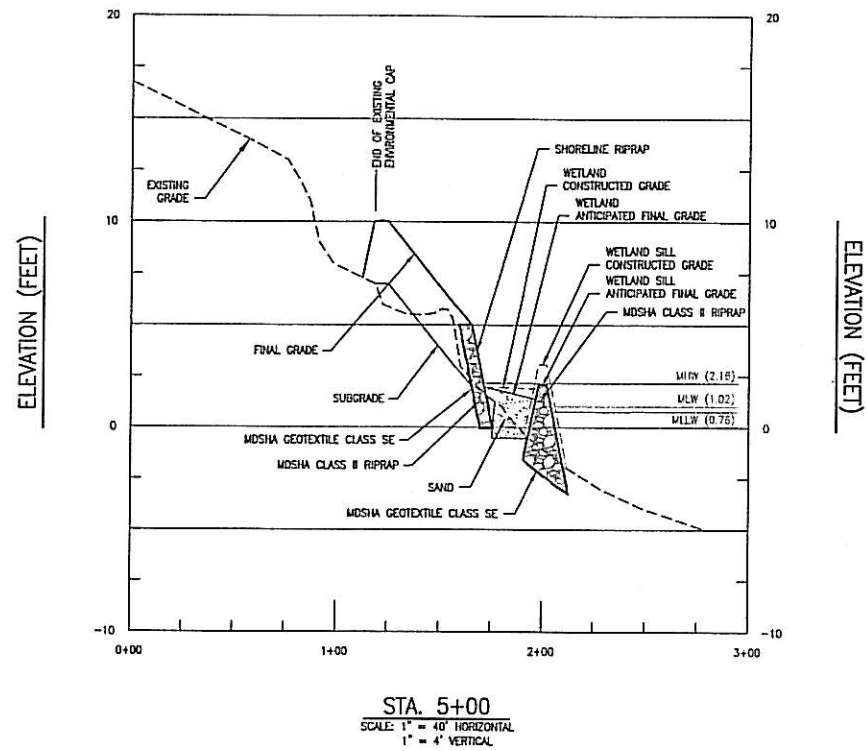
SEAL

FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION

BALTIMORE, MARYLAND

CROSS SECTIONS 1

<p>EA ENGINEERING, SCIENCE, AND TECHNOLOGY</p> <p>Loveton Center 15 Loveton Circle Sparks, Maryland 21152 (410) 771-4950</p>	
DATE	MARCH 2009
DESIGNED BY	RED
DRAWN BY	RED
CHECKED BY	CAT
PROJECT MANAGER	JMH
PROJECT NUMBER	14543.01
DRAWING NUMBER	CS-1
SHEET NUMBER	12 OF 14



REVISIONS		DESCRIPTION
NO.	DATE	BY

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13441, EXPIRATION DATE: JULY 2, 2010.

SEAL

FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION

BALTIMORE, MARYLAND

CROSS SECTIONS II

EA ENGINEERING, SCIENCE AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

DATE: MARCH 2009

DESIGNED BY: RED

DRAWN BY: RED

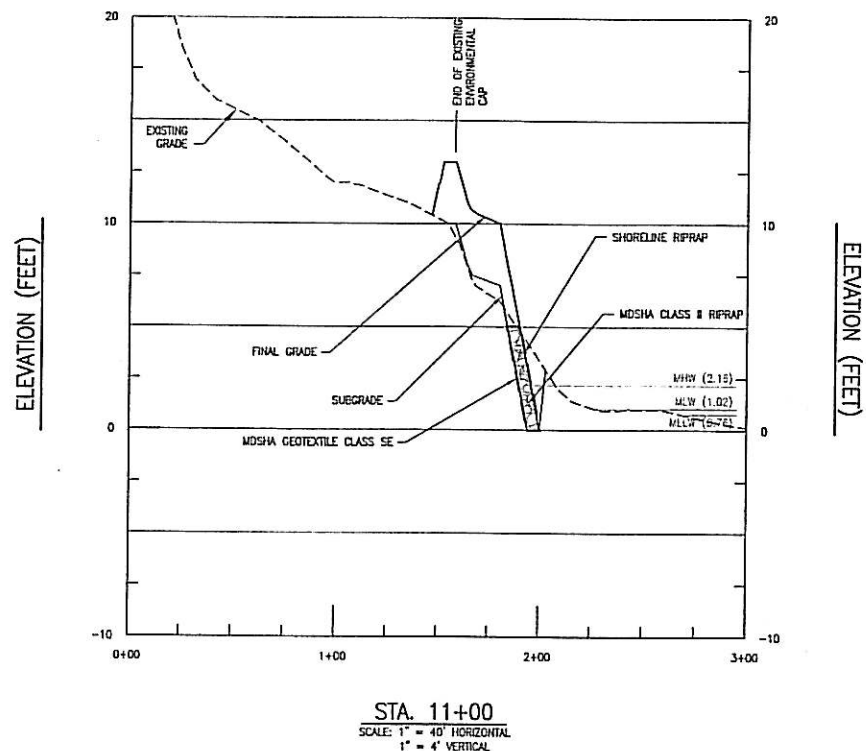
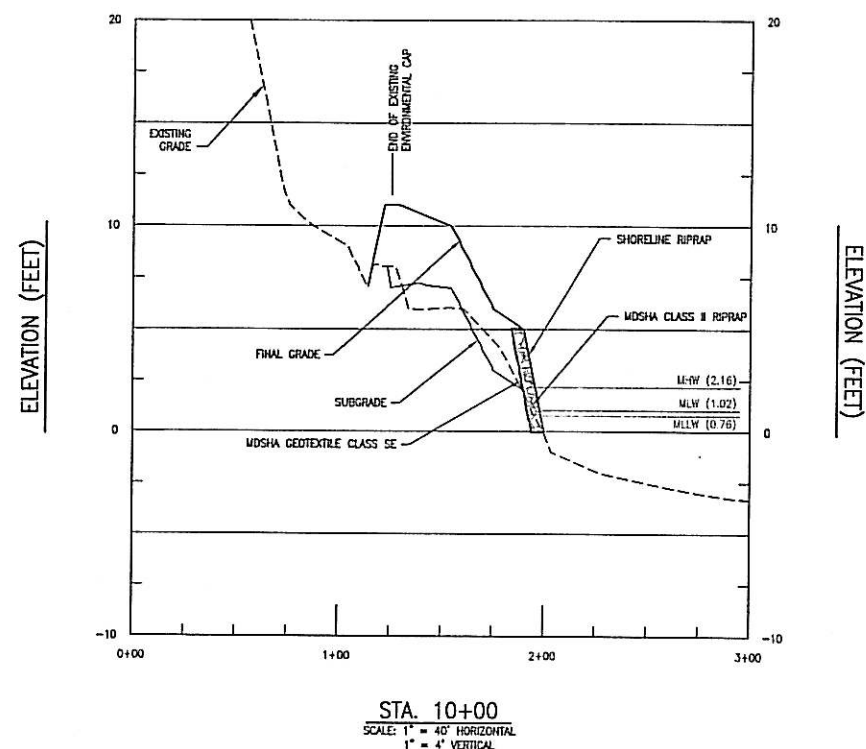
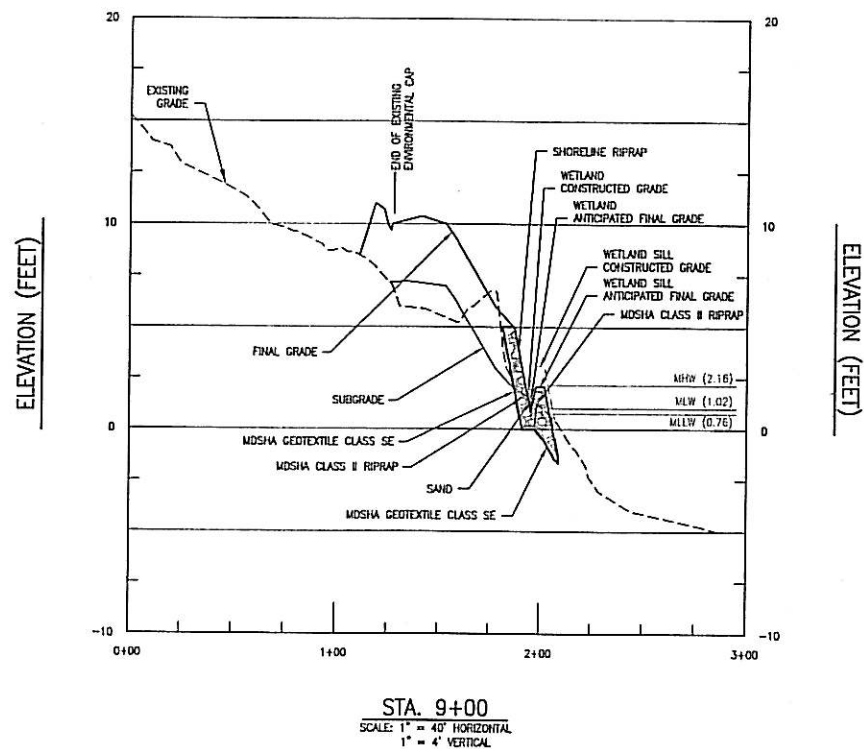
CHECKED BY: CAT

PROJECT MANAGER: JMH

PROJECT NUMBER: 14543.01

DRAWING NUMBER: CS-2

SHEET NUMBER: 13 OF 14



REVISIONS		DESCRIPTION
NO.	DATE	BY

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 11551, EXPIRATION DATE: JULY 7, 2009.

SEALED

FORMER CARR-LOWREY GLASS WORKS PROPERTY
WETLAND AND SHORELINE CAP CONSTRUCTION

BALTIMORE, MARYLAND

CROSS SECTIONS III

EA
EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

DATE: MARCH 2009

DESIGNED BY: RED

DRAWN BY: RED

CHECKED BY: GAT

PROJECT MANAGER: JMH

PROJECT NUMBER: 14543.01

DRAWING NUMBER: CS-3

SHEET NUMBER: 14 OF 14